CHAPTER XI

The Structural Study of Myth

> "It would seem that mythological worlds have been built up only to be shattered again, and that new worlds were built from the fragments."
>
> —Franz Boas[1]

DESPITE some recent attempts to renew them, it seems that during the past twenty years anthropology has increasingly turned from studies in the field of religion. At the same time, and precisely because the interest of professional anthropologists has withdrawn from primitive religion, all kinds of amateurs who claim to belong to other disciplines have seized this opportunity to move in, thereby turning into their private playground what we had left as a wasteland. The prospects for the scientific study of religion have thus been undermined in two ways.

The explanation for this situation lies to some extent in the fact that the anthropological study of religion was started by men like Tylor, Frazer, and Durkheim, who were psychologically oriented although not in a position to keep up with the progress of psychological research and theory. Their interpretations, therefore, soon became vitiated by the outmoded psychological approach which they used as their basis. Although they were undoubtedly right in giving their attention to intellectual processes, the way they

handled these remained so crude that it discredited them altogether. This is much to be regretted, since, as Hocart so profoundly noted in his introduction to a posthumous book recently published,[2] psychological interpretations were withdrawn from the intellectual field only to be introduced again in the field of affectivity, thus adding to "the inherent defects of the psychological school . . . the mistake of deriving clear-cut ideas . . . from vague emotions." Instead of trying to enlarge the framework of our logic to include processes which, whatever their apparent differences, belong to the same kind of intellectual operation, a naïve attempt was made to reduce them to inarticulate emotional drives, which resulted only in hampering our studies.

Of all the chapters of religious anthropology probably none has tarried to the same extent as studies in the field of mythology. From a theoretical point of view the situation remains very much the same as it was fifty years ago, namely, chaotic. Myths are still widely interpreted in conflicting ways: as collective dreams, as the outcome of a kind of esthetic play, or as the basis of ritual. Mythological figures are considered as personified abstractions, divinized heroes, or fallen gods. Whatever the hypothesis, the choice amounts to reducing mythology either to idle play or to a crude kind of philosophic speculation.

In order to understand what a myth really is, must we choose between platitude and sophism? Some claim that human societies merely express, through their mythology, fundamental feelings common to the whole of mankind, such as love, hate, or revenge or that they try to provide some kind of explanations for phenomena which they cannot otherwise understand—astronomical, meteorological, and the like. But why should these societies do it in such elaborate and devious ways, when all of them are also acquainted with empirical explanations? On the other hand, psychoanalysts and many anthropologists have shifted the problems away from the natural or cosmological toward the sociological and psychological fields. But then the interpretation becomes too easy: If a given mythology confers prominence on a certain figure, let us say an evil grandmother, it will be claimed that in such a society grandmothers are actually evil and that mythology reflects the social structure and the social relations; but should the actual data be conflicting, it would be as readily claimed that the purpose

of mythology is to provide an outlet for repressed feelings. Whatever the situation, a clever dialectic will always find a way to pretend that a meaning has been found.

Mythology confronts the student with a situation which at first sight appears contradictory. On the one hand it would seem that in the course of a myth anything is likely to happen. There is no logic, no continuity. Any characteristic can be attributed to any subject; every conceivable relation can be found. With myth, everything becomes possible. But on the other hand, this apparent arbitrariness is belied by the astounding similarity between myths collected in widely different regions. Therefore the problem: If the content of a myth is contingent, how are we going to explain the fact that myths throughout the world are so similar?

It is precisely this awareness of a basic antinomy pertaining to the nature of myth that may lead us toward its solution. For the contradiction which we face is very similar to that which in earlier times brought considerable worry to the first philosophers concerned with linguistic problems; linguistics could only begin to evolve as a science after this contradiction had been overcome. Ancient philosophers reasoned about language the way we do about mythology. On the one hand, they did notice that in a given language certain sequences of sounds were associated with definite meanings, and they earnestly aimed at discovering a reason for the linkage between those *sounds* and that *meaning*. Their attempt, however, was thwarted from the very beginning by the fact that the same sounds were equally present in other languages although the meaning they conveyed was entirely different. The contradiction was surmounted only by the discovery that it is the combination of sounds, not the sounds themselves, which provides the significant data.

It is easy to see, moreover, that some of the more recent interpretations of mythological thought originated from the same kind of misconception under which those early linguists were laboring. Let us consider, for instance, Jung's idea that a given mythological pattern—the so-called archetype—possesses a certain meaning. This is comparable to the long-supported error that a sound may possess a certain affinity with a meaning: for instance, the "liquid" semi-vowels with water, the open vowels with things that are big, large, loud, or heavy, etc., a theory which still has its

supporters.[3] Whatever emendations the original formulation may now call for,[4] everybody will agree that the Saussurean principle of the *arbitrary character of linguistic signs* was a prerequisite for the accession of linguistics to the scientific level.

To invite the mythologist to compare his precarious situation with that of the linguist in the prescientific stage is not enough. As a matter of fact we may thus be led only from one difficulty to another. There is a very good reason why myth cannot simply be treated as language if its specific problems are to be solved; myth *is* language: to be known, myth has to be told; it is a part of human speech. In order to preserve its specificity we must be able to show that it is both the same thing as language, and also something different from it. Here, too, the past experience of linguists may help us. For language itself can be analyzed into things which are at the same time similar and yet different. This is precisely what is expressed in Saussure's distinction between *langue* and *parole*, one being the structural side of language, the other the statistical aspect of it, *langue* belonging to a reversible time, *parole* being non-reversible. If those two levels already exist in language, then a third one can conceivably be isolated.

We have distinguished *langue* and *parole* by the different time referents which they use. Keeping this in mind, we may notice that myth uses a third referent which combines the properties of the first two. On the one hand, a myth always refers to events alleged to have taken place long ago. But what gives the myth an operational value is that the specific pattern described is timeless; it explains the present and the past as well as the future. This can be made clear through a comparison between myth and what appears to have largely replaced it in modern societies, namely, politics. When the historian refers to the French Revolution, it is always as a sequence of past happenings, a non-reversible series of events the remote consequences of which may still be felt at present. But to the French politician, as well as to his followers, the French Revolution is both a sequence belonging to the past—as to the historian—and a timeless pattern which can be detected in the contemporary French social structure and which provides a clue for its interpretation, a lead from which to infer future developments. Michelet, for instance, was a politically minded historian. He describes the French Revolution thus: "That day . . . everything

was possible. . . . Future became present . . . that is, no more time, a glimpse of eternity." [6] It is that double structure, altogether historical and ahistorical, which explains how myth, while pertaining to the realm of *parole* and calling for an explanation as such, as well as to that of *langue* in which it is expressed, can also be an absolute entity on a third level which, though it remains linguistic by nature, is nevertheless distinct from the other two.

A remark can be introduced at this point which will help to show the originality of myth in relation to other linguistic phenomena. Myth is the part of language where the formula *traduttore, traditore* reaches its lowest truth value. From that point of view it should be placed in the gamut of linguistic expressions at the end opposite to that of poetry, in spite of all the claims which have been made to prove the contrary. Poetry is a kind of speech which cannot be translated except at the cost of serious distortions; whereas the mythical value of the myth is preserved even through the worst translation. Whatever our ignorance of the language and the culture of the people where it originated, a myth is still felt as a myth by any reader anywhere in the world. Its substance does not lie in its style, its original music, or its syntax, but in the *story* which it tells. Myth is language, functioning on an especially high level where meaning succeeds practically at "taking off" from the linguistic ground on which it keeps on rolling.

To sum up the discussion at this point, we have so far made the following claims: (1) If there is a meaning to be found in mythology, it cannot reside in the isolated elements which enter into the composition of a myth, but only in the way those elements are combined. (2) Although myth belongs to the same category as language, being, as a matter of fact, only part of it, language in myth exhibits specific properties. (3) Those properties are only to be found *above* the ordinary linguistic level, that is, they exhibit more complex features than those which are to be found in any other kind of linguistic expression.

If the above three points are granted, at least as a working hypothesis, two consequences will follow: (1) Myth, like the rest of language, is made up of constituent units. (2) These constituent units presuppose the constituent units present in language when analyzed on other levels—namely, phonemes, morphemes, and sememes—but they, nevertheless, differ from the latter in the same

way as the latter differ among themselves; they belong to a higher and more complex order. For this reason, we shall call them *gross constituent units.*

How shall we proceed in order to identify and isolate these gross constituent units or mythemes? We know that they cannot be found among phonemes, morphemes, or sememes, but only on a higher level; otherwise myth would become confused with any other kind of speech. Therefore, we should look for them on the sentence level. The only method we can suggest at this stage is to proceed tentatively, by trial and error, using as a check the principles which serve as a basis for any kind of structural analysis: economy of explanation; unity of solution; and ability to reconstruct the whole from a fragment, as well as later stages from previous ones.

The technique which has been applied so far by this writer consists in analyzing each myth individually, breaking down its story into the shortest possible sentences, and writing each sentence on an index card bearing a number corresponding to the unfolding of the story.

Practically each card will thus show that a certain function is, at a given time, linked to a given subject. Or, to put it otherwise, each gross constituent unit will consist of a *relation.*

However, the above definition remains highly unsatisfactory for two different reasons. First, it is well known to structural linguists that constituent units on all levels are made up of relations, and the true difference between our *gross* units and the others remains unexplained; second, we still find ourselves in the realm of a non-reversible time, since the numbers of the cards correspond to the unfolding of the narrative. Thus the specific character of mythological time, which as we have seen is both reversible and non-reversible, synchronic and diachronic, remains unaccounted for. From this springs a new hypothesis, which constitutes the very core of our argument: The true constituent units of a myth are not the isolated relations but *bundles of such relations*, and it is only as bundles that these relations can be put to use and combined so as to produce a meaning. Relations pertaining to the same bundle may appear diachronically at remote intervals, but when we have succeeded in grouping them together we have reorganized our myth according to a time referent of a new nature, corre-

sponding to the prerequisite of the initial hypothesis, namely a two-dimensional time referent which is simultaneously diachronic and synchronic, and which accordingly integrates the characteristics of *langue* on the one hand, and those of *parole* on the other. To put it in even more linguistic terms, it is as though a phoneme were always made up of all its variants.

Two comparisons may help to explain what we have in mind.

Let us first suppose that archaeologists of the future coming from another planet would one day, when all human life had disappeared from the earth, excavate one of our libraries. Even if they were at first ignorant of our writing, they might succeed in deciphering it—an undertaking which would require, at some early stage, the discovery that the alphabet, as we are in the habit of printing it, should be read from left to right and from top to bottom. However, they would soon discover that a whole category of books did not fit the usual pattern—these would be the orchestra scores on the shelves of the music division. But after trying, without success, to decipher staffs one after the other, from the upper down to the lower, they would probably notice that the same patterns of notes recurred at intervals, either in full or in part, or that some patterns were strongly reminiscent of earlier ones. Hence the hypothesis: What if patterns showing affinity, instead of being considered in succession, were to be treated as one complex pattern and read as a whole? By getting at what we call *harmony*, they would then see that an orchestra score, to be meaningful, must be read diachronically along one axis—that is, page after page, and from left to right—and synchronically along the other axis, all the notes written vertically making up one gross constituent unit, that is, one bundle of relations.

The other comparison is somewhat different. Let us take an observer ignorant of our playing cards, sitting for a long time with a fortune-teller. He would know something of the visitors: sex, age, physical appearance, social situation, etc., in the same way as we know something of the different cultures whose myths we try to study. He would also listen to the séances and record them so as to be able to go over them and make comparisons—as we do when we listen to myth-telling and record it. Mathematicians to whom I have put the problem agree that if the man is bright and if the material available to him is sufficient, he may be able to reconstruct

the nature of the deck of cards being used, that is, fifty-two or thirty-two cards according to the case, made up of four homologous sets consisting of the same units (the individual cards) with only one varying feature, the suit.

Now for a concrete example of the method we propose. We shall use the Oedipus myth, which is well known to everyone. I am well aware that the Oedipus myth has only reached us under late forms and through literary transmutations concerned more with esthetic and moral preoccupations than with religious or ritual ones, whatever these may have been. But we shall not interpret the Oedipus myth in literal terms, much less offer an explanation acceptable to the specialist. We simply wish to illustrate—and without reaching any conclusions with respect to it—a certain technique, whose use is probably not legitimate in this particular instance, owing to the problematic elements indicated above. The "demonstration" should therefore be conceived, not in terms of what the scientist means by this term, but at best in terms of what is meant by the street peddler, whose aim is not to achieve a concrete result, but to explain, as succinctly as possible, the functioning of the mechanical toy which he is trying to sell to the onlookers.

The myth will be treated as an orchestra score would be if it were unwittingly considered as a unilinear series; our task is to reestablish the correct arrangement. Say, for instance, we were confronted with a sequence of the type: 1,2,4,7,8,2,3,4,6,8,1,4,5,7,8,1, 2,5,7,3,4,5,6,8 . . . , the assignment being to put all the 1's together, all the 2's, the 3's, etc.; the result is a chart:

1	2		4			7	8
	2	3	4		6		8
1			4	5		7	8
1	2			5		7	
		3	4	5	6		8

We shall attempt to perform the same kind of operation on the Oedipus myth, trying out several arrangements of the mythemes until we find one which is in harmony with the principles enumerated above. Let us suppose, for the sake of argument, that the best arrangement is the following (although it might certainly be improved with the help of a specialist in Greek mythology):

Cadmos seeks his sister Europa, ravished by Zeus			
		Cadmos kills the dragon	
	The Spartoi kill one another		
			Labdacos (Laios' father) = *lame* (*?*)
	Oedipus kills his father, Laios		Laios (Oedipus' father) = *left-sided* (*?*)
		Oedipus kills the Sphinx	
			Oedipus = *swollen-foot* (*?*)
Oedipus marries his mother, Jocasta			
	Eteocles kills his brother, Polynices		
Antigone buries her brother, Polynices, despite prohibition			

We thus find ourselves confronted with four vertical columns, each of which includes several relations belonging to the same bundle. Were we to *tell* the myth, we would disregard the columns and read the rows from left to right and from top to bottom. But if we want to *understand* the myth, then we will have to disregard one half of the diachronic dimension (top to bottom) and read from left to right, column after column, each one being considered as a unit.

All the relations belonging to the same column exhibit one common feature which it is our task to discover. For instance, all the events grouped in the first column on the left have something to do with blood relations which are overemphasized, that is, are more intimate than they should be. Let us say, then, that the first column has as its common feature the *overrating of blood relations.* It is obvious that the second column expresses the same thing, but inverted: *underrating of blood relations.* The third column refers to monsters being slain. As to the fourth, a few words of clarification are needed. The remarkable connotation of the surnames in Oedipus' father-line has often been noticed. However, linguists usually disregard it, since to them the only way to define the meaning of a term is to investigate all the contexts in which it appears, and personal names, precisely because they are used as such, are not accompanied by any context. With the method we propose to follow the objection disappears, since the myth itself provides its own context. The significance is no longer to be sought in the eventual meaning of each name, but in the fact that all the names have a common feature: All the hypothetical meanings (which may well remain hypothetical) refer to *difficulties in walking straight and standing upright.*

What then is the relationship between the two columns on the right? Column three refers to monsters. The dragon is a chthonian being which has to be killed in order that mankind be born from the Earth; the Sphinx is a monster unwilling to permit men to live. The last unit reproduces the first one, which has to do with the *autochthonous origin* of mankind. Since the monsters are overcome by men, we may thus say that the common feature of the third column is *denial of the autochthonous origin of man.*[6]

This immediately helps us to understand the meaning of the fourth column. In mythology it is a universal characteristic of men born from the Earth that at the moment they emerge from the depth they either cannot walk or they walk clumsily. This is the case of the chthonian beings in the mythology of the Pueblo: Muyingwu, who leads the emergence, and the chthonian Shumaikoli are lame ("bleeding-foot," "sore-foot"). The same happens to the Koskimo of the Kwakiutl after they have been swallowed by the chthonian monster, Tsiakish: When they returned to the surface of the earth "they limped forward or tripped side-

ways." Thus the common feature of the fourth column is *the persistence of the autochthonous origin of man.* It follows that column four is to column three as column one is to column two. The inability to connect two kinds of relationships is overcome (or rather replaced) by the assertion that contradictory relationships are identical inasmuch as they are both self-contradictory in a similar way. Although this is still a provisional formulation of the structure of mythical thought, it is sufficient at this stage.

Turning back to the Oedipus myth, we may now see what it means. The myth has to do with the inability, for a culture which holds the belief that mankind is autochthonous (see, for instance, Pausanias, VIII, xxix, 4: plants provide a *model* for humans), to find a satisfactory transition between this theory and the knowledge that human beings are actually born from the union of man and woman. Although the problem obviously cannot be solved, the Oedipus myth provides a kind of logical tool which relates the original problem—born from one or born from two?—to the derivative problem: born from different or born from same? By a correlation of this type, the overrating of blood relations is to the underrating of blood relations as the attempt to escape autochthony is to the impossibility to succeed in it. Although experience contradicts theory, social life validates cosmology by its similarity of structure. Hence cosmology is true.

Two remarks should be made at this stage.

In order to interpret the myth, we left aside a point which has worried the specialists until now, namely, that in the earlier (Homeric) versions of the Oedipus myth, some basic elements are lacking, such as Jocasta killing herself and Oedipus piercing his own eyes. These events do not alter the substance of the myth although they can easily be integrated, the first one as a new case of autodestruction (column three) and the second as another case of crippledness (column four). At the same time there is something significant in these additions, since the shift from foot to head is to be correlated with the shift from autochthonous origin to self-destruction.

Our method thus eliminates a problem which has, so far, been one of the main obstacles to the progress of mythological studies, namely, the quest for the *true* version, or the *earlier* one. On the

contrary, we define the myth as consisting of all its versions; or to put it otherwise, a myth remains the same as long as it is felt as such. A striking example is offered by the fact that our interpretation may take into account the Freudian use of the Oedipus myth and is certainly applicable to it. Although the Freudian problem has ceased to be that of autochthony *versus* bisexual reproduction, it is still the problem of understanding how *one* can be born from *two:* How is it that we do not have only one procreator, but a mother plus a father? Therefore, not only Sophocles, but Freud himself, should be included among the recorded versions of the Oedipus myth on a par with earlier or seemingly more "authentic" versions.

An important consequence follows. If a myth is made up of all its variants, structural analysis should take all of them into account. After analyzing all the known variants of the Theban version, we should thus treat the others in the same way: first, the tales about Labdacos' collateral line including Agave, Pentheus, and Jocasta herself; the Theban variant about Lycos with Amphion and Zetos as the city founders; more remote variants concerning Dionysus (Oedipus' matrilateral cousin); and Athenian legends where Cecrops takes the place of Cadmos, etc. For each of them a similar chart should be drawn and then compared and reorganized according to the findings: Cecrops killing the serpent with the parallel episode of Cadmos; abandonment of Dionysus with abandonment of Oedipus; "Swollen Foot" with Dionysus' *loxias*, that is, walking obliquely; Europa's quest with Antiope's; the founding of Thebes by the Spartoi or by the brothers Amphion and Zetos; Zeus kidnapping Europa and Antiope and the same with Semele; the Theban Oedipus and the Argian Perseus, etc. We shall then have several two-dimensional charts, each dealing with a variant, to be organized in a three-dimensional order, as shown in Figure 16, so that three different readings become possible: left to right, top to bottom, front to back (or vice versa). All of these charts cannot be expected to be identical; but experience shows that any difference to be observed may be correlated with other differences, so that a logical treatment of the whole will allow simplifications, the final outcome being the structural law of the myth.

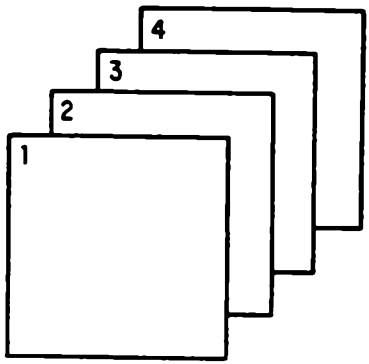

FIGURE 16

At this point the objection may be raised that the task is impossible to perform, since we can only work with known versions. Is it not possible that a new version might alter the picture? This is true enough if only one or two versions are available, but the objection becomes theoretical as soon as a reasonably large number have been recorded. Let us make this point clear by a comparison. If the furniture of a room and its arrangement were known to us only through its reflection in two mirrors placed on opposite walls, we should theoretically dispose of an almost infinite number of mirror images which would provide us with a complete knowledge. However, should the two mirrors be obliquely set, the number of mirror images would become very small; nevertheless, four or five such images would very likely give us, if not complete information, at least a sufficient coverage so that we would feel sure that no large piece of furniture is missing in our description.

On the other hand, it cannot be too strongly emphasized that all available variants should be taken into account. If Freudian comments on the Oedipus complex are a part of the Oedipus myth, then questions such as whether Cushing's version of the Zuni origin myth should be retained or discarded become irrelevant. There is no single "true" version of which all the others are but copies or distortions. Every version belongs to the myth.

The reason for the discouraging results in works on general mythology can finally be understood. They stem from two causes. First, comparative mythologists have selected preferred versions instead of using them all. Second, we have seen that the structural

analysis of *one* variant of *one* myth belonging to *one* tribe (in some cases, even *one* village) already requires two dimensions. When we use several variants of the same myth for the same tribe or village, the frame of reference becomes three-dimensional, and as soon as we try to enlarge the comparison, the number of dimensions required increases until it appears quite impossible to handle them intuitively. The confusions and platitudes which are the outcome of comparative mythology can be explained by the fact that multi-dimensional frames of reference are often ignored or are naïvely replaced by two- or three-dimensional ones. Indeed, progress in comparative mythology depends largely on the cooperation of mathematicians who would undertake to express in symbols multi-dimensional relations which cannot be handled otherwise.

To check this theory,[7] an attempt was made from 1952 to 1954 toward an exhaustive analysis of all the known versions of the Zuni origin and emergence myth: Cushing, 1883 and 1896; Stevenson, 1904; Parsons, 1923; Bunzel, 1932; Benedict, 1934. Furthermore, a preliminary attempt was made at a comparison of the results with similar myths in other Pueblo tribes, Western and Eastern. Finally, a test was undertaken with Plains mythology. In all cases, it was found that the theory was sound; light was thrown, not only on North American mythology, but also on a previously unnoticed kind of logical operation, or one known so far only in a wholly different context. The bulk of material which needs to be handled practically at the outset of the work makes it impossible to enter into details, and we shall have to limit ourselves here to a few illustrations.

A simplified chart of the Zuni emergence myth would read:

CHANGE			DEATH
mechanical value of plants (used as ladders to emerge from lower world)	emergence led by Beloved Twins	sibling incest (origin of water)	gods kill children of men (by drowning)
food value of wild plants	migration led by the two Newekwe		magical contest with People of the Dew (col-
DEATH			PERMANENCE

CHANGE			DEATH
	(ceremonial clowns)		lecting wild food *versus* cultivation)
		brother and sister sacrificed (to gain victory)	
food value of cultivated plants			
		brother and sister adopted (in exchange for corn)	
periodical character of agricultural work			
			war against the Kyanakwe (gardeners *versus* hunters)
food value of game (hunting)			
	war led by the two War-Gods		
inevitability of warfare			salvation of the tribe (center of the World found)
		brother and sister sacrificed (to avoid the Flood)	
DEATH			PERMANENCE

As the chart indicates, the problem is the discovery of a life-death mediation. For the Pueblo, this is especially difficult; they understand the origin of human life in terms of the model of plant

life (emergence from the earth). They share that belief with the ancient Greeks, and it is not without reason that we chose the Oedipus myth as our first example. But in the American Indian case, the highest form of plant life is to be found in agriculture which is periodical in nature, that is, which consists in an alternation between life and death. If this is disregarded, the contradiction appears elsewhere: Agriculture provides food, therefore life; but hunting provides food and is similar to warfare which means death. Hence there are three different ways of handling the problem. In the Cushing version, the difficulty revolves around an opposition between activities yielding an immediate result (collecting wild food) and activities yielding a delayed result—death has to become integrated so that agriculture can exist. Parsons' version shifts from hunting to agriculture, while Stevenson's version operates the other way around. It can be shown that all the differences between these versions can be rigorously correlated with these basic structures.

Thus the three versions describe the great war waged by the ancestors of the Zuni against a mythical population, the Kyanakwe, by introducing into the narrative significant variations which consist (1) in the friendship or hostility of the gods; (2) in the granting of final victory to one camp or the other; (3) in the attribution of the symbolic function to the Kyanakwe, described sometimes as hunters (whose bows are strung with animal sinews) and sometimes as gardeners (whose bows are strung with plant fibers).

CUSHING	PARSONS	STEVENSON
Gods, Kyanakwe } allied, use fiber string on their bows (gardeners)	Kyanakwe, alone, use fiber string	Gods, Men } allied, use fiber string
VICTORIOUS OVER	**VICTORIOUS OVER**	**VICTORIOUS OVER**
Men, alone, use sinew (until they shift to fiber)	Gods, Men } allied, use sinew string	Kyanakwe, alone, use sinew string

Since fiber string (agriculture) is always superior to sinew string (hunting), and since (to a lesser extent) the gods' alliance is preferable to their antagonism, it follows that in Cushing's version, men are seen as doubly underprivileged (hostile gods, sinew string);

in the Stevenson version, doubly privileged (friendly gods, fiber string); while Parsons' version confronts us with an intermediary situation (friendly gods, but sinew strings, since men begin by being hunters). Hence:

OPPOSITIONS	CUSHING	PARSONS	STEVENSON
gods/men	−	+	+
fiber/sinew	−	−	+

Bunzel's version is of the same type as Cushing's from a structural point of view. However, it differs from both Cushing's and Stevenson's, inasmuch as the latter two explain the emergence as the result of man's need to evade his pitiful condition, while Bunzel's version makes it the consequence of a call from the higher powers—hence the inverted sequences of the means resorted to for the emergence: In both Cushing and Stevenson, they go from plants to animals; in Bunzel, from mammals to insects, and from insects to plants.

Among the Western Pueblo the logical approach always remains the same; the starting point and the point of arrival are simplest, whereas the intermediate stage is characterized by ambiguity:

LIFE (= INCREASE)		
(Mechanical) value of the plant kingdom, taking growth alone into account		ORIGINS
Food value of the plant kingdom, limited to wild plants		FOOD-GATHERING
Food value of the plant kingdom, including wild and cultivated plants		AGRICULTURE
Food value of the animal kingdom, limited to animals	*(but there is a contradiction here, owing to the negation of life = destruction, hence:)*	
Destruction of the animal kingdom, extended to human beings		HUNTING
		WARFARE
DEATH (= DECREASE)		

The fact that contradiction appears in the middle of the dialectical process results in a double set of dioscuric pairs, the purpose of which is to mediate between conflicting terms:

1. 2 divine messengers	2 ceremonial clowns		2 war-gods
2. homogeneous pair: dioscuri (2 brothers)	siblings (brother and sister)	couple (husband and wife)	heterogeneous pair: (grandmother and grandchild)

We have here combinational variants of the same function in different contexts (hence the war attribute of the clowns, which has given rise to so many queries).

The problem, often regarded as insoluble, vanishes when it is shown that the clowns—gluttons who may with impunity make excessive use of agricultural products—have the same function in relation to food production as the war-gods. (This function appears, in the dialectical process, as *overstepping the boundaries* of hunting, that is, hunting for men instead of for animals for human consumption.)

Some Central and Eastern Pueblos proceed the other way around. They begin by stating the identity of hunting and cultivation (first corn obtained by Game-Father sowing deer-dewclaws), and they try to derive both life and death from that central notion. Then, instead of extreme terms being simple and intermediary ones duplicated as among the Western groups, the extreme terms become duplicated (i.e., the two sisters of the Eastern Pueblo) while a simple mediating term comes to the foreground (for instance, the Poshaiyanne of the Zia), but endowed with equivocal attributes. Hence the attributes of this "messiah" can be deduced from the place it occupies in the time sequence: good when at the beginning (Zuni, Cushing), equivocal in the middle (Central Pueblo), bad at the end (Zia), except in Bunzel's version, where the sequence is reversed as has been shown.

By systematically using this kind of structural analysis it becomes possible to organize all the known variants of a myth into a set forming a kind of permutation group, the two variants placed at the far ends being in a symmetrical, though inverted, relationship to each other.

Our method not only has the advantage of bringing some kind of order to what was previously chaos; it also enables us to perceive some basic logical processes which are at the root of mythical thought.[8] Three main processes should be distinguished.

The trickster of American mythology has remained so far a problematic figure. Why is it that throughout North America his role is assigned practically everywhere to either coyote or raven? If we keep in mind that mythical thought always progresses from the awareness of oppositions toward their resolution, the reason for these choices becomes clearer. We need only assume that two opposite terms with no intermediary always tend to be replaced by two equivalent terms which admit of a third one as a mediator; then one of the polar terms and the mediator become replaced by a new triad, and so on. Thus we have a mediating structure of the following type:

INITIAL PAIR	FIRST TRIAD	SECOND TRIAD
Life		
	Agriculture	
		Herbivorous animals
		Carrion-eating animals (raven; coyote)
	Hunting	
		Beasts of prey
	Warfare	
Death		

The unformulated argument is as follows: carrion-eating animals are like beasts of prey (they eat animal food), but they are also like food-plant producers (they do not kill what they eat). Or to put it otherwise, Pueblo style (for Pueblo agriculture is more "meaningful" than hunting): ravens are to gardens as beasts of prey are to herbivorous animals. But it is also clear that herbivorous animals may be called first to act as mediators on the assumption that they are like collectors and gatherers (plant-food eaters), while they can be used as animal food though they are not themselves hunters. Thus we may have mediators of the first order,

of the second order, and so on, where each term generates the next by a double process of opposition and correlation.

This kind of process can be followed in the mythology of the Plains, where we may order the data according to the set:

Unsuccessful mediator between Earth and Sky
(Star-Husband's wife)

Heterogeneous pair of mediators
(grandmother and grandchild)

Semi-homogeneous pair of mediators
(Lodge-Boy and Thrown-away)

While among the Pueblo (Zuni) we have the corresponding set:

Successful mediator between Earth and Sky
(Poshaiyanki)

Semi-homogeneous pair of mediators
(Uyuyewi and Matsailema)

Homogeneous pair of mediators
(the two Ahaiyuta)

On the other hand, correlations may appear on a horizontal axis (this is true even on the linguistic level; see the manifold connotation of the root *pose* in Tewa according to Parsons: coyote, mist, scalp, etc.). Coyote (a carrion-eater) is intermediary between herbivorous and carnivorous just as mist between Sky and Earth; as scalp between war and agriculture (scalp is a war crop); as corn smut between wild and cultivated plants; as garments between "nature" and "culture"; as refuse between village and outside; and as ashes (or soot) between roof (sky vault) and hearth (in the ground). This chain of mediators, if one may call them so, not only throws light on entire parts of North American mythology—why the Dew-God may be at the same time the Game-Master and the giver of raiments and be personified as an "Ash-Boy"; or why scalps are mist-producing; or why the Game-Mother is associated with corn smut; etc.—but it also probably corresponds to a universal way of organizing daily experience. See, for instance, the French for plant smut (*nielle*, from Latin *nebula*); the luck-bringing power attributed in Europe to refuse (old shoe) and ashes (kissing chimney sweeps); and compare the

American Ash-Boy cycle with the Indo-European Cinderella: Both are phallic figures (mediators between male and female); masters of the dew and the game; owners of fine raiments; and social mediators (low class marrying into high class); but they are impossible to interpret through recent diffusion, as has been contended, since Ash-Boy and Cinderella are symmetrical but inverted in every detail (while the borrowed Cinderella tale in America—Zuni Turkey-Girl—is parallel to the prototype). Hence the chart:

	EUROPE	AMERICA
Sex	female	male
Family Status	double family (remarried father)	no family (orphan)
Appearance	pretty girl	ugly boy
Sentimental status	nobody likes her	unrequited love for girl
Transformation	luxuriously clothed with supernatural help	stripped of ugliness with supernatural help

Thus, like Ash-Boy and Cinderella, the trickster is a mediator. Since his mediating function occupies a position halfway between two polar terms, he must retain something of that duality—namely an ambiguous and equivocal character. But the trickster figure is not the only conceivable form of mediation; some myths seem to be entirely devoted to the task of exhausting all the possible solutions to the problem of bridging the gap between *two* and *one*. For instance, a comparison between all the variants of the Zuni emergence myth provides us with a series of mediating devices, each of which generates the next one by a process of opposition and correlation:

messiah > dioscuri > trickster > bisexual being > sibling pair > married couple > grandmother-grandchild > four-term group > triad

In Cushing's version, this dialectic is associated with a change from a spatial dimension (mediation between Sky and Earth) to a tem-

poral dimension (mediation between summer and winter, that is, between birth and death). But while the shift is being made from space to time, the final solution (triad) re-introduces space, since a triad consists of a dioscuric pair *plus* a messiah, present simultaneously; and while the point of departure was ostensibly formulated in terms of a space referent (Sky and Earth), this was nevertheless implicitly conceived in terms of a time referent (first the messiah calls, *then* the dioscuri descend). Therefore the logic of myth confronts us with a double, reciprocal exchange of functions to which we shall return shortly.

Not only can we account for the ambiguous character of the trickster, but we can also understand another property of mythical figures the world over, namely, that the same god is endowed with contradictory attributes—for instance, he may be *good* and *bad* at the same time. If we compare the variants of the Hopi myth of the origin of Shalako, we may order them in terms of the following structure:

$$(\text{Masauwu: } x) \simeq (\text{Muyingwu: Masauwu}) \simeq (\text{Shalako: Muyingwu}) \simeq (y\text{: Masauwu})$$

where x and y represent arbitrary values corresponding to the fact that in the two "extreme" variants the god Masauwu, while appearing alone rather than associated with another god, as in variant two, or being absent, as in variant three, still retains intrinsically a relative value. In variant one, Masauwu (alone) is depicted as helpful to mankind (though not as helpful as he could be), and in version four, harmful to mankind (though not as harmful as he could be). His role is thus defined—at least implicitly—in contrast with another role which is possible but not specified and which is represented here by the values x and y. In version 2, on the other hand, Muyingwu is relatively more helpful than Masauwu, and in version three, Shalako more helpful than Muyingwu. We find an identical series when ordering the Keresan variants:

$$(\text{Poshaiyanki: } x) \simeq (\text{Lea: Poshaiyanki}) \simeq (\text{Poshaiyanki: Tiamoni}) \simeq (y\text{: Poshaiyanki})$$

This logical framework is particularly interesting, since anthropologists are already acquainted with it on two other levels—

first, in regard to the problem of the pecking order among hens, and second, to what this writer has called *generalized exchange* in the field of kinship. By recognizing it also on the level of mythical thought, we may find ourselves in a better position to appraise its basic importance in anthropological studies and to give it a more inclusive theoretical interpretation.

Finally, when we have succeeded in organizing a whole series of variants into a kind of permutation group, we are in a position to formulate the law of that group. Although it is not possible at the present stage to come closer than an approximate formulation which will certainly need to be refined in the future, it seems that every myth (considered as the aggregate of all its variants) corresponds to a formula of the following type:

$$F_x(a) : F_y(b) \simeq F_x(b) : F_{a^{-1}}(y)$$

Here, with two terms, a and b, being given as well as two functions, x and y, of these terms, it is assumed that a relation of equivalence exists between two situations defined respectively by an inversion of *terms* and *relations*, under two conditions: (1) that one term be replaced by its opposite (in the above formula, a and a^{-1}); (2) that an inversion be made between the *function value* and the *term value* of two elements (above, y and a).

This formula becomes highly significant when we recall that Freud considered that *two traumas* (and not one, as is so commonly said) are necessary in order to generate the individual myth in which a neurosis consists. By trying to apply the formula to the analysis of these traumas (and assuming that they correspond to conditions 1 and 2 respectively) we should not only be able to provide a more precise and rigorous formulation of the genetic law of the myth, but we would find ourselves in the much desired position of developing side by side the anthropological and the psychological aspects of the theory; we might also take it to the laboratory and subject it to experimental verification.

At this point it seems unfortunate that with the limited means at the disposal of French anthropological research no further advance can be made. It should be emphasized that the task of analyzing mythological literature, which is extremely bulky, and of breaking it down into its constituent units, requires team work and

technical help. A variant of average length requires several hundred cards to be properly analyzed. To discover a suitable pattern of rows and columns for those cards, special devices are needed, consisting of vertical boards about six feet long and four and a half feet high, where cards can be pigeon-holed and moved at will. In order to build up three-dimensional models enabling one to compare the variants, several such boards are necessary, and this in turn requires a spacious workshop, a commodity particularly unavailable in Western Europe nowadays. Furthermore, as soon as the frame of reference becomes multi-dimensional (which occurs at an early stage, as has been shown above) the board system has to be replaced by perforated cards, which in turn require IBM equipment, etc.

Three final remarks may serve as conclusion.

First, the question has often been raised why myths, and more generally oral literature, are so much addicted to duplication, triplication, or quadruplication of the same sequence. If our hypotheses are accepted, the answer is obvious: The function of repetition is to render the structure of the myth apparent. For we have seen that the synchronic-diachronic structure of the myth permits us to organize it into diachronic sequences (the rows in our tables) which should be read synchronically (the columns). Thus, a myth exhibits a "slated" structure, which comes to the surface, so to speak, through the process of repetition.

However, the slates are not absolutely identical. And since the purpose of myth is to provide a logical model capable of overcoming a contradiction (an impossible achievement if, as it happens, the contradiction is real), a theoretically infinite number of slates will be generated, each one slightly different from the others. Thus, myth grows spiral-wise until the intellectual impulse which has produced it is exhausted. Its *growth* is a continuous process, whereas its *structure* remains discontinuous. If this is the case, we should assume that it closely corresponds, in the realm of the spoken word, to a crystal in the realm of physical matter. This analogy may help us to better understand the relationship of myth to both *langue* on the one hand and *parole* on the other. Myth is an intermediary entity between a statistical aggregate of molecules and the molecular structure itself.

Prevalent attempts to explain alleged differences between the so-called primitive mind and scientific thought have resorted to qualitative differences between the working processes of the mind in both cases, while assuming that the entities which they were studying remained very much the same. If our interpretation is correct, we are led toward a completely different view—namely, that the kind of logic in mythical thought is as rigorous as that of modern science, and that the difference lies, not in the quality of the intellectual process, but in the nature of the things to which it is applied. This is well in agreement with the situation known to prevail in the field of technology: What makes a steel ax superior to a stone ax is not that the first one is better made than the second. They are equally well made, but steel is quite different from stone. In the same way we may be able to show that the same logical processes operate in myth as in science, and that man has always been thinking equally well; the improvement lies, not in an alleged progress of man's mind, but in the discovery of new areas to which it may apply its unchanged and unchanging powers.

NOTES

1. In Boas' Introduction to James Teit, "Traditions of the Thompson River Indians of British Columbia," *Memoirs of the American Folklore Society*, VI (1898), p. 18.
2. A. M. Hocart, *Social Origins* (London: 1954), p. 7.
3. See, for instance, Sir R. A. Paget, "The Origin of Language," *Journal of World History*, I, No. 2 (UNESCO, 1953).
4. See Émile Benveniste, "Nature du signe linguistique," *Acta Linguistica*, I, No. 1 (1939); and Chapter V in the present volume.
5. Jules Michelet, *Histoire de la Révolution française*, IV, 1. I took this quotation from M. Merleau-Ponty, *Les Aventures de la dialectique* (Paris: 1955), p. 273.
6. We are not trying to become involved with specialists in an argument; this would be presumptuous and even meaningless on our part. Since the Oedipus myth is taken here merely as an example treated in arbitrary fashion, the chthonian nature ascribed to the Sphinx might seem surprising; we shall refer to the testimony of Marie Delcourt: "In the archaic legends, [she is] certainly born of the Earth itself" (*Oedipe ou la légende du conquérant* [Liège: 1944], p. 108). No matter how remote from Delcourt's our method may be (and our conclusions would be, no doubt, if we were competent to deal with the problem in depth), it seems to us that she has convincingly established the nature of the Sphinx in the archaic tradition, namely, that of a female monster who attacks and rapes

young men; in other words, the personification of a female being with an inversion of the sign. This explains why, in the handsome iconography compiled by Delcourt at the end of her work, men and women are always found in an inverted "sky/earth" relationship.

As we shall point out below, we selected the Oedipus myth as our first example because of the striking analogies that seem to exist between certain aspects of archaic Greek thought and that of the Pueblo Indians, from whom we have borrowed the examples that follow. In this respect it should be noted that the figure of the Sphinx, as reconstructed by Delcourt, coincides with two figures of North American mythology (who probably merge into one). We are referring, on the one hand, to "the old hag," a repulsive witch whose physical appearance presents a "problem" to the young hero. If he "solves" this problem—that is, if he responds to the advances of the abject creature—he will find in his bed, upon awakening, a beautiful young woman who will confer power upon him (this is also a Celtic theme). The Sphinx, on the other hand, recalls even more "the child-protruding woman" of the Hopi Indians, that is, a phallic mother par excellence. This young woman was abandoned by her group in the course of a difficult migration, just as she was about to give birth. Henceforth she wanders in the desert as the "Mother of Animals," which she withholds from hunters. He who meets her in her bloody clothes "is so frightened that he has an erection," of which she takes advantage to rape him, after which she rewards him with unfailing success in hunting. See H. R. Voth, "The Oraibi Summer Snake Ceremony," *Field Columbian Museum*, Publication No. 83, Anthropological Series, Vol. III, No. 4 (Chicago: 1903), pp. 352-3 and p. 353, *n* 1.

7. See *Annuaire de l'École pratique des Hautes Études*, Section des Sciences religieuses, 1952-1953, pp. 19-21, and 1953-1954, pp. 27-9. Thanks are due here to an unrequested but deeply appreciated grant from the Ford Foundation.
8. For another application of this method, see our study "Four Winnebago Myths: A Structural Sketch," in Stanley Diamond (ed.), *Culture in History: Essays in Honor of Paul Radin* (New York: 1960), pp. 351-62.